

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

- 1-9. (Cancelled)
10. (New) A method of generating disparity results with low latency in an image processing system that processes elements of a first set of image data and a second set of image data, each having a plurality of elements, comprising:

receiving elements of the first and second data sets, including a first element of the first data set; and

generating a disparity result for the first element before substantially all elements of the first and second data sets have been received.
11. (New) The method of claim 10 wherein the elements of the first and second data sets represent pixel intensities, further comprising performing a left-right consistency check in which inconsistent pixels are labeled and discarded for purposes of future processing.
12. (New) The method of claim 10 further comprising performing an interest operation in which displacements in regions which have a low degree of contrast or texture are discarded.
13. (New) The method of claim 10 further comprising filtering selected disparities based on a population analysis.
14. (New) The method of claim 10 further comprising determining whether an object is moving by calculating motion between a first image and a second image taken at different times.
15. (New) The method of claim 10 wherein the image data is received from a camera, further comprising storing as an attribute of pixel information associated with one or more images depth information calculated based at least in part on the disparity result,

wherein the depth information is used to compress objects in an image that are more distant to the camera to a greater degree than objects which are closer to the camera.

16. (New) The method of claim 10 further comprising guiding a robot by determining the distance to an object based at least in part on the disparity result.
17. (New) The method of claim 10 further comprising eliminating background information beyond a certain distance based at least in part on the disparity result.
18. (New) The method of claim 10 further comprising creating a composite image in which an object from a first video sequence is inserted at the appropriate depth into a second video sequence based at least in part on the disparity result.
19. (New) A method for determining the distance of image elements from an aligned first camera and second camera by generating disparity results for such image elements with low latency, comprising:

obtaining image elements of a first data set and a second data set, representing pixel intensities captured respectively by the first camera and the second camera, the first and second data sets each having a plurality of image elements, including a first image element of the first data set that is offset from each of a plurality of selected image elements of the second data set by a particular disparity;

performing transformations on such received image elements, including the first image element and each of the plurality of selected image elements;

correlating the transformed first image element with each of the plurality of transformed selected image elements to generate a correlation result for each disparity, while concurrently performing transformations on one or more image elements of each of the first and second data sets;

generating a disparity result for the first image element by selecting an optimal one of the correlation results, in accordance with predetermined optimization criteria, while concurrently correlating transformed image elements of each of the first and second data sets; and

determining the distance of the first image element from the first and second cameras, based upon the disparity result;

wherein the first and second cameras are included in a pair of eyeglasses.

20. (New) A method of generating disparity results with low latency in a sound processing system that processes elements of a first set of sound data and a second set of sound data, each having a plurality of elements, comprising:

receiving elements of the first and second data sets, including a first element of the first data set; and

generating a disparity result for the first element before substantially all elements of the first and second data sets have been received.